

may be processed into a print job that is arranged according to the layout in an XHTML template, and then the template is transmitted to an image forming device via a Bluetooth wireless network using Bluetooth BPP.

[0045] FIG. 5 illustrates a wireless protocol adaptive printing method 500. The method 500 may include, at 510, retrieving a cellular telephone print item from a server. The server types from which the cellular telephone print item can be retrieved include, but are not limited to, an MMS server, an SMS server, a contact server, a calendar server, a message server, an image server, a text server, and a game server. At 520, a determination is made concerning whether the cellular telephone print item is a complete message. If the determination at 520 is No, that the cellular telephone print item is not a complete message, then the method 500 may include, at 530, communicating with a server to retrieve additional data until the cellular telephone print item is a complete message. Completing the retrieval at 530 may involve communicating with one or more servers. For example, a message header may have been retrieved at 510 and the message header may indicate that text associated with the message header is available at a text server while images associated with the message header are available at an image server. Thus, completing the retrieval at 530 may include communicating with the text server for the text and the image server for the images.

[0046] Once a complete message is retrieved, the method 500 may also include, at 540, identifying a communication link by which a cellular telephone can communicate with an image forming device and, at 550, identifying a protocol by which print items can be transmitted. For example, the communication link may be a wireless link supported by WAP and the print data transmission protocol may be based on a Bluetooth wireless network and Bluetooth BPP.

[0047] The method 500 may also include, at 560, identifying printable elements in the complete retrieved cellular telephone print item and, at 570, selectively processing chosen printable elements into print job elements. The method 500 may then include, at 580 selecting an arranger to guide the layout of the print job elements and arranging the print job elements into a print job. In one example the arranger is an XHTML template and the print job elements are merged into the XHTML document along with printer-ready instructions concerning the print job elements. At 590, the print job is transmitted, via the wireless communication link, using the print data transmission protocol to an image forming device. It is to be appreciated that processor executable instructions for portions and/or all of method 500 may be stored on a computer-readable medium.

[0048] In one example, a computer-readable medium may store processor executable instructions operable to perform a method that includes, retrieving a cellular telephone print item from an MMS server and selectively retrieving additional data from the MMS server to make a complete cellular telephone print item that includes printable elements. The method may also include identifying a wireless communication link by which a print job can be transmitted from a camera-enabled mobile phone to a printer via a Bluetooth wireless network and Bluetooth BPP and filtering out of the printable elements print job elements to process into a printer-ready format, where the identifying depends, at least in part, on content types supported by a Bluetooth wireless

network and Bluetooth BPP. The method may also include processing the print job elements into a print job, where the processing includes generating one or more printer-ready instructions and arranging the print job elements and the printer-ready instructions in an XHTML template. The method may also include transmitting the XHTML template to the printer using the wireless communication link, a Bluetooth wireless network, and Bluetooth BPP.

[0049] FIG. 6 illustrates an example cellular telephone 600 configured with a wireless protocol adaptive printing system. The cellular telephone 600 may communicate with an image forming device 610 over a wireless network using, for example, Bluetooth protocols, and/or IEEE 802.11 protocols. Bluetooth refers to short-range radio technology concerned with data and/or computer communications. Information concerning the Bluetooth specification and protocols can be found, for example, at [www.bluetooth.org](http://www.bluetooth.org). IEEE 802.11 refers to a family of specifications developed by the Institute of Electrical and Electronics Engineers (IEEE) for wireless local area network (LAN) technology.

[0050] The image forming device 610 may be, for example, a printer. The cellular telephone 600 may be, for example, a camera-enabled mobile phone. The cellular telephone 600 may have available a print item 620 to be processed by the print system. The print item 620 may be associated with a message received from a server. Servers with which the message may be associated include, but are not limited to, an MMS server, an SMS server, an image server, a text server, an audio server, and so on. Thus, the print item 620 may include various parts 622. Some of the parts 622 may be printable (e.g., text, JPEG file) on the image forming device 610 when communicated via a print data transmission protocol. In one example, the print item 620 may be an MMS message.

[0051] The cellular telephone protocol adaptive print system may include a content transforming logic 630 configured to process the print item 620 into a print job 640 pursuant to a print data transmission protocol supported by a mobile device protocol logic 650. The protocol logic 650 may be configured, for example, to transmit a print job 640 from a cellular telephone 600 to an image forming device 610 pursuant to a print data transmission protocol. Thus, the protocol logic 650 can be said to support a print data transmission protocol. In one example, the print data transmission protocol is based on a Bluetooth wireless network and Bluetooth BPP.

[0052] In one example, the cellular telephone protocol adaptive print system may be incorporated in a wireless communication device 600. The cellular telephone 600 may be, for example, a camera-enabled mobile phone.

[0053] The image forming device 610 may include a receiving protocol logic 660 configured to receive a print job 640 processed by the mobile device protocol logic 650. Additionally, the image forming device 610 may include a rendering logic 670 configured to process the print job received by the receiving protocol logic 660 into a printer-usable format. The rendering logic 670 may be configured, for example, to render the print job received by the receiving protocol logic 660 into a bitmap.

[0054] Printer-ready formats can include forms like printer-ready bits, printer-ready instructions, printer-inde-